

ASAP

Date: Friday, 7/4/2008 12:49:39 PM
User: Kim Johnston

Process Sheet

| | |
|--|--------------------------------------|
| Customer : CU-DAR001 Dart Helicopters Services | Drawing Name : STEP WELDMENT |
| Job Number : 40289 | |
| Estimate Number : 12577 | |
| P.O. Number : | Part Number : D3562042 |
| This Issue : 7/4/2008 S.O. No. : | Drawing Number : D3562 REV E |
| Prsht Rev. : NC | Project Number : N/A |
| First Issue : / / Type : LARGE FAB ASSY | Drawing Revision : E |
| Previous Run : 37044 | Material : |
| Written By : | Due Date : 7/28/2008 Qty: 4 Um: Each |
| Checked & Approved By : <i>[Signature]</i> | |
| Comment : Est Rev: A New Issue 06-11-09 JLM | |
| Est rev B ECN 987 07.10.09 EC verified by: DD | |
| Est Rev: C ECN1048 07-12-18 DD verified by: EC | |

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 D2622120C Step Extrusion



Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s)

| | | | |
|-----|------------|-------------|-----------------|
| Qty | Part # | Description | Batch: |
| 1 | D2622-120C | Extrusion | <i>B39316</i> ✓ |

Check Material for any Dents or Defects

SP 08-07-14

2.0 LARGE FAB 1 LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Cut D2622 extrusion as per Dwg D3562

2-Deburr and bevel ends for welding

SP 08-07-14
SP 08-07-14

3.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

SP 08/7/14 (x4)

4.0 HAND FINISHING1 HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

SP 08-07-14 SP

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

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Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

08-07-14

(X)

6.0

D3560042

Arm Weldment



Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s)

ARM WELDMENT

Batch: 335296 ✓

08-07-22 SP.

7.0

D3560044

Arm Weldment



Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s)

ARM WELDMENT

Batch: 336421 ✓

08-07-22

8.0

MS20600AD4W5

Blind Rivet



Comment: Qty.: 32.0000 Each(s)/Unit Total : 128.0000 Each(s)

Blind Rivet

batch: M106431 ✓

08-07-22 SP.

9.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1- Drill Rivet holes as per dwg D3562. Touch up alodine

2- Rivet legs using Magnabond as per dwg D3562.

*****Ensure to wipe off any excess magnabond *****

A/R Magnabond 6398 Batch: M106695

08-07-16 SP.

(PTC)

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08-07-17 44 PM

11.0

D2734

Step End Plate



Comment: Qty.: 2.0000 Each(s)/Unit Total : 8.0000 Each(s)

Pick:

Qty Part Number

2 D2734

Description Batch

End Cap

B36520 ✓

08-07-22 SP

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: D3562-042 PAR #: N/A Fault Category: Prod/Fab - Large NCR: (Yes) No DQA: D Date: 08/07/30
D412-630-034 QA: N/C Closed: D Date: 08/07/30

| NCR: <u>40289</u> | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|-------------------|------|---|------------------------------|---|--------------------------------|--------------------------------|------------------------------|--------------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| 08-07-16 | 9.0 | On the Final leg on 1 step, the bottom rivet was removed 3 times, due to the center pin pulling out. R.C. Hole became enlarged each time the rivet was removed. | <i>[Signature]</i> QS1042 | remove the D3560-042 riv, and fill the affected hole with weld, as well as the hole in the step, as per QS1004. grind flush, and touch-up area with Alodine | <i>[Signature]</i> 08-07-16 | <i>[Signature]</i> 08-07-16 | <i>[Signature]</i> QS1042 | <i>[Signature]</i> 08-07-16 |
| | | | <i>[Signature]</i> QS1042 | re-rivet the D3560-042 riv as per W/O: 005, and measure; transfer drill a new hole, debur. Touch-up hole with Alodine. And install a new rivet, per W/O | <i>[Signature]</i> 08-07-15 | <i>[Signature]</i> 08-07-16 | <i>[Signature]</i> QS1042 | <i>[Signature]</i> 08-07-16 |
| | | | | m 106431 Qty 3 | | | | |

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Job Number:



Seq. #:

Machine Or Operation:

Description:

12.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Weld end caps as per Dwg D3562& QSI 004. Inspect for foreign objects as per QSI 024.

A/R Aluminum Rod H106834

2-Grind end cap welds flush as per Dwg D3562

↳ S&P 08/07/23 (4)

08-07-22 SP

13.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

PD 08-07-23 (4)

14.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 08/07/23 (4) RHC

15.0

POWDER COATING

POWDER COATING



M108523



4X RHC

Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M-1 08/07/24

16.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Wing Walk as per Dwg D3562 and QSI 005 4.4

Batch: M108496

BR 08-07-28

17.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

08/07/28 (4) RHC

18.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Assembly Kit

6-A 08/07/29 (4)

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: D3562-042 PAR #: N/A Fault Category: Prod / Prod Large NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

| NCR: 40289 | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------------|------|--|--------------------------------|--|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| 08/16/04 | B.O. | After powder coating it was found that 3 steps have magnanone residue left on them. The steps were cleaned with thinner but the residue still shows. | [Signature] | Sand all three steps with 320 grit sand paper | BR 08/07/05 | [Signature] | [Signature] | [Signature] |
| | | | | clean with R19 thinner | 08/07/05 | | | |
| | | | [Signature] | Re powder coat as per Q57005 | M.H. 08/16/05 | [Signature] | [Signature] | [Signature] |
| | | | | - inform welders that all steps must be free of any magnanone residue. Residue, SAD SP etc | 08-07-28 | | | |
| | | | | | | | | |

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Part Number: D3562042

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

QC21

FINAL INSPECTION/W/O RELEASE



08/07/30

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



MF 08-07-01

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

D3562-1, MAKE FROM EXTRUSION D2622

D3560-043 ARM WELDMENT

D3560-041 ARM WELDMENT

D3560-042 ARM WELDMENT

D3560-044 ARM WELDMENT

D3562-1, MAKE FROM EXTRUSION D2622

2
APPLY BLACK ANTI-SKID ON TOP SURFACE TO BOTTOM OF TOP RADIUS

2
APPLY BLACK ANTI-SKID ON TOP SURFACE TO BOTTOM OF TOP RADIUS

TRANSFER DRILL #30 DEBURR & TOUCH UP HOLES WITH CHEMICAL CONVERSION COAT BEFORE RIVETING (32 PLACES PER STEP)

REFER TO STEP END DETAIL

INSTALL MS20600AD4W5 RIVET (32 PLACES PER STEP)

MEASURED BEFORE END CAPS WELDED IN PLACE

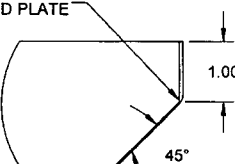
MEASURED BEFORE END CAPS WELDED IN PLACE

FWD

FWD

ROUND CORNER OF EXTRUSION TO MATCH BEND RADIUS OF END PLATE

NOTE: ALL WELDS SHALL BE 100% VISUALLY INSPECTED BY A QUALIFIED INSPECTOR PER DART QSI 004



D2734 END PLATE (TYP 2 PLACES)
TYPICAL STEP END DETAIL
SCALE 1:2

D3562-041 LH STEP ASSEMBLY

D3562-042 RH STEP ASSEMBLY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH:

- i) CHEMICAL CONVERSION COAT STEP EXTRUSION PER DART QSI 005 4.1 BEFORE ASSEMBLY
- ii) POWDER COAT ASSEMBLY GLOSS WHITE (4.3.5.1) OR GREY SANDTEX (4.3.5.6) OR BLACK SANDTEX (4.3.5.7) OR GREEN SANDTEX (4.3.5.8) PER DART QSI 005 4.3
- iii) BLACK ANTI-SKID PAINT PER DART QSI 005 4.4

- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 8.79 lbs
- 8) INSTALL ARM WELDMENTS WITH A LAYER OF MAGNOBOND 6398 BETWEEN THE ARM WELDMENT AND STEP EXTRUSION. FILL ANY TOOLING HOLES WITH MAGNOBOND 6398. CLEAN OFF EXCESS BEFORE POWDER COATING.
- 9) WELDING: PER DART QSI 004

NO. 40289
WORKORDER
SUBJECT TO AMENDMENT
WITHOUT NOTICE
UNCONTROLLED COPY
ENGINEERING
RETURN TO
SHOP COPY

| QTY -041 | QTY -042 | P/N | DESCRIPTION |
|----------|----------|--------------|------------------|
| X | X | D3562-041 | LH STEP ASSEMBLY |
| | | D3562-042 | RH STEP ASSEMBLY |
| 1 | | D3560-041 | ARM WELDMENT |
| | 1 | D3560-042 | ARM WELDMENT |
| 1 | | D3560-043 | ARM WELDMENT |
| | 1 | D3560-044 | ARM WELDMENT |
| 32 | 32 | MS20600AD4W5 | RIVET |
| 2 | 2 | D2734 | END PLATE |

| | | | |
|------------|---|----|----------|
| E | ADD QTY (2) TO D2734 END PLATE ON D3562-042 | PH | 08.01.11 |
| D | REMOVE D2808 SPACER NOTE; REDRAWN IN SOLIDWORKS | DC | 07.11.16 |
| C | NOW MAGNOBOND, ADD D2808, REMOVE 4 RIVETS | CP | 07.06.19 |
| B | ARMS NOW RIVETED TO STEP | CP | 07.01.15 |
| A | NEW ISSUE | CP | 06.09.26 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | 90 | | |
| DRAWN | SE | | |
| CHECKED | LE | | |
| MFG. APPR. | MD | | |
| APPROVED | MD | | |
| DE APPR. | MD | | |
| DATE | 08.01.11 | | |

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D3562
STEP ASSEMBLY
REV. E
SHEET 1 OF 1
SCALE 1:5

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